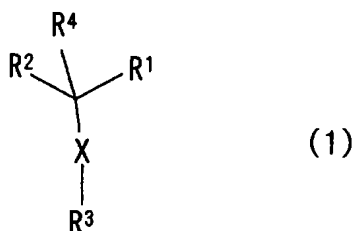


IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A compound represented by formula (1):



wherein,

R^1 represents phenyl ~~which may have a substituent~~ which may have 1 to 3 substituents selected from halogen atoms, C_{1-6} alkyl groups, trihalogenomethyl groups, C_{1-6} alkoxy groups, formyl group, C_{2-6} alkanoyl groups, carboxyl group, carboxyamino C_{1-6} alkyl groups, C_{1-6} alkoxycarbonylamino C_{1-6} alkyl groups, oxo group, nitro group, cyano group, amidino group, C_{2-6} alkenyloxy groups, hydroxy group, thioxo group, amino group, C_{1-6} alkylamino groups, di(C_{1-6} alkyl)amino groups, C_{1-6} alkoxycarbonyl groups, carbamoyl group, C_{1-6} alkylcarbamoyl groups, di(C_{1-6} alkyl)carbamoyl groups, thiocarbamoyl group, C_{1-6} alkylthiocarbamoyl groups, di(C_{1-6} alkyl)thiocarbamoyl groups, mercapto group, C_{1-6} alkylthio groups, C_{1-6} alkylsulfinyl groups and C_{1-6} alkylsulfonyl groups,

R^2 represents a pyridyl group which may be substituted with 1 to 3 substituents selected from halogen atoms, cyano group, C_{1-6} alkyl groups, hydroxy group, C_{1-6} alkoxy groups, C_{2-6} alkenyloxy groups, carboxy C_{1-6} alkyl groups, C_{1-6} alkoxycarbonyl C_{1-6} alkyl groups, hydroxy C_{1-6} alkyl groups, C_{6-10} aromatic hydrocarbon-sulfonyl C_{1-6} alkyl groups, N,N-di(C_{1-6} alkyl)aminosulfonyl C_{1-6} alkyl groups, C_{6-10} aromatic hydrocarbon- C_{1-6} alkyl groups, C_{6-10} aromatic hydrocarbon-thio C_{1-6} alkyl groups, azido- C_{1-6} alkyl groups, amino C_{1-6} alkyl groups, C_{1-6} alkylamino C_{1-6} alkyl groups, di(C_{1-6} alkyl)amino C_{1-6} alkyl groups, hydroxy C_{1-6} alkylamino C_{1-6} alkyl groups, C_{1-6} alkoxy C_{1-6} alkylamino C_{1-6} alkyl groups,

bis(C₁₋₆ alkoxy C₁₋₆ alkyl)amino C₁₋₆ alkyl groups, (hydroxy C₁₋₆ alkyl)(C₁₋₆ alkoxy C₁₋₆ alkyl)amino C₁₋₆ alkyl groups, C₂₋₆ alkanoylamino C₁₋₆ alkyl groups, di(C₂₋₆ alkanoyl)amino C₁₋₆ alkyl groups, carboxyamino C₁₋₆ alkyl groups, di(C₁₋₆ alkylcarbonylamino C₁₋₆ alkyl)amino C₁₋₆ alkyl groups, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkyl groups, di(C₁₋₆ alkoxycarbonyl)amino C₁₋₆ alkyl groups, carbamoylamino C₁₋₆ alkyl groups, N-C₁₋₆ alkylcarbamoylamino C₁₋₆ alkyl groups, N,N-di(C₁₋₆ alkyl)carbamoylamino C₁₋₆ alkyl groups, aminosulfonylamino C₁₋₆ alkyl groups, N-C₁₋₆ alkylsulfonylamino C₁₋₆ alkyl groups, di(C₁₋₆ alkyl)aminosulfonylamino C₁₋₆ alkyl groups, C₆₋₁₀ aromatic hydrocarbon-sulfonylamino-C₂₋₆ alkanoylamino C₁₋₆ alkyl groups, amino C₁₋₆ alkylcarbonylamino C₁₋₆ alkyl groups, N-C₁₋₆ alkylamino C₁₋₆ alkylcarbonylamino C₁₋₆ alkyl groups, N,N-di(C₁₋₆ alkyl)amino C₁₋₆ alkylcarbonylamino C₁₋₆ alkyl groups, C₆₋₁₀ aromatic hydrocarbon-C₂₋₆ alkenylcarbonylamino C₁₋₆ alkyl groups, C₆₋₁₀ aromatic hydrocarbon-carbonylamino C₁₋₆ alkyl groups, C₆₋₁₀ aromatic hydrocarbon-thiocarbonylamino C₁₋₆ alkyl groups, C₁₋₆ alkoxyoxalylamino C₁₋₆ alkyl groups, (C₆₋₁₀ aromatic hydrocarbon-sulfonyl)(C₁₋₆ alkyl)amino C₁₋₆ alkyl groups, C₁₋₆ alkylsulfonylamino C₁₋₆ alkyl groups, C₁₋₆ alkylsulfonylamino C₁₋₆ alkyl groups, carbamoyloxy C₁₋₆ alkyl groups, N-C₁₋₆ alkylcarbamoyloxy C₁₋₆ alkyl groups, N,N-di(C₁₋₆ alkyl)carbamoyloxy C₁₋₆ alkyl groups, C₆₋₁₀ aromatic hydrocarbon-C₁₋₆ alkylcarbamoyloxy C₁₋₆ alkyl groups, C₁₋₆ alkoxycarbonyloxy-C₁₋₆ alkyl groups, C₆₋₁₀ aromatic hydrocarbon-oxycarbonyloxy C₁₋₆ alkyl groups, C₆₋₁₀ aromatic hydrocarbon carbonylhydrazonomethyl groups, C₂₋₆ alkenyl groups, carboxy-C₂₋₅ alkenyl groups, C₁₋₆ alkoxycarbonyl-C₂₋₆ alkenyl groups, carbamoyl C₂₋₆ alkenyl groups, formyl group, carboxyl group, C₆₋₁₀ aromatic hydrocarbon-carbonyl groups, C₁₋₆ alkoxycarbonyl groups, carbamoyl group, N-C₁₋₆ alkylcarbamoyl groups, N,N-di(C₁₋₆ alkyl)carbamoyl groups, C₃₋₈ cycloalkyl-C₁₋₆ alkylcarbamoyl groups, C₁₋₆ alkylthio C₁₋₆ alkylcarbamoyl groups, C₁₋₆ alkylsulfinyl C₁₋₆ alkylcarbamoyl groups, C₁₋₆ alkylsulfonyl C₁₋₆ alkylcarbamoyl groups,

hydroxyaminocarbonyl group, C₁₋₆ alkoxy carbamoyl groups, hydroxy C₁₋₆ alkylcarbamoyl groups, C₁₋₆ alkoxy C₁₋₆ alkylcarbamoyl groups, amino C₁₋₆ alkylcarbamoyl groups, amino C₁₋₆ alkylthiocarbamoyl groups, hydroxy C₁₋₆ alkylcarbamoyl groups, C₁₋₆ alkoxy carbonyl C₁₋₆ alkylcarbamoyl groups, C₁₋₆ alkoxy carbonylamino C₁₋₆ alkylcarbamoyl groups, C₁₋₆ alkoxy carbonylamino C₁₋₆ alkylthiocarbamoyl groups, C₆₋₁₀ aromatic hydrocarbon-carbamoyl groups, hydrazinocarbonyl groups, N-C₁₋₆ alkylhydrazinocarbonyl groups, N'-C₁₋₆ alkylhydrazinocarbonyl groups, N',N'-di(C₁₋₆ alkyl)hydrazinocarbonyl groups, N,N'-di(C₁₋₆ alkyl)hydrazinocarbonyl groups, N,N',N'-tri(C₁₋₆ alkyl)hydrazinocarbonyl groups, amino group, C₁₋₆ alkoxy C₁₋₆ alkylamino groups, amino C₁₋₆ alkylamino groups, (C₁₋₆ alkylamino C₁₋₆ alkylamino groups, (C₁₋₆ alkylamino C₁₋₆ alkyl)(C₁₋₆ alkyl)amino groups, C₁₋₆ alkoxy carbonylamino C₁₋₆ alkylamino groups, di(C₁₋₆ alkyl)amino C₁₋₆ alkylamino groups, carboxyl C₁₋₆ alkylamino groups, (carboxyl C₁₋₆ alkyl)(C₁₋₆ alkyl)amino groups, hydroxy C₁₋₆ alkylamino groups, (hydroxy C₁₋₆ alkyl)(C₁₋₆ alkyl)amino groups, C₁₋₆ alkylthio C₁₋₆ alkylamino groups, C₁₋₆ alkylaminocarbonyloxy C₁₋₆ alkylamino groups, (C₁₋₆ alkylaminocarbonyloxy C₁₋₆ alkyl)(C₁₋₆ alkyl)amino groups, C₁₋₆ alkylsulfinyl C₁₋₆ alkylamino groups, C₁₋₆ alkylsulfonyl C₁₋₆ alkylamino groups, groups represented by the formula: -N(R¹²)SO₂R¹¹ (wherein, R¹¹ represents a C₁₋₆ alkyl group, hydroxy C₁₋₆ alkyl group, amino C₁₋₆ alkyl group, C₁₋₆ alkylamino C₁₋₆ alkyl group, di(C₁₋₆ alkyl)amino C₁₋₆ alkyl group, carboxy C₁₋₆ alkyl group, carbamoyl C₁₋₆ alkyl group, trifluoromethyl group, difluoromethyl group, fluoromethyl group, amino group, C₁₋₆ alkylamino group or di(C₁₋₆ alkyl)amino group, R¹² represents a hydrogen atom, C₁₋₆ alkyl group, hydroxy group or amino group), hydroxy C₁₋₆ alkoxy C₁₋₆ alkylamino groups, C₆₋₁₀ aromatic hydrocarbon-C₁₋₆ alkylamino groups, C₁₋₆ alkoxy carbonylamino groups, C₆₋₁₀ aromatic hydrocarbon-carbonylamino groups, hydroxyimino group, C₁₋₆ alkoxyimino groups, oxo group, hydroxyimino C₁₋₆ alkyl groups, C₁₋₆ alkoxy carbonyl C₁₋₆ alkylamino groups, (C₂₋₆

alkanoylamino C₁₋₆ alkyl)amino groups, and C₆₋₁₀ aromatic hydrocarbon groups (in which, the C₆₋₁₀ aromatic hydrocarbon group may be substituted with 1 to 3 substituents selected from halogen atoms, C₁₋₆ alkyl groups, C₁₋₆ alkoxy groups, C₂₋₆ alkenyl groups, formyl group, C₂₋₆ alkanoyl groups, carboxyl group, carboxyamino C₁₋₆ alkyl groups, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkyl groups, oxo group, nitro group, cyano group, amidino group, C₂₋₆ alkenyloxy groups, hydroxy group, thioxo group, amino group, C₁₋₆ alkylamino groups, di(C₁₋₆ alkyl)amino groups, amino C₁₋₆ alkyl groups, C₁₋₆ alkoxycarbonyl groups, carbamoyl group, C₁₋₆ alkylcarbamoyl groups, di(C₁₋₆ alkyl)carbamoyl groups, thiocarbamoyl group, C₁₋₆ alkylthiocarbamoyl groups, di(C₁₋₆ alkyl)thiocarbamoyl groups, C₂₋₆ alkanoylamino groups, C₂₋₆ alkanoyl(C₁₋₆ alkyl)amino groups, thio C₂₋₆ alkanoylamino groups, thio C₂₋₆ alkanoyl(C₁₋₆ alkyl)amino groups, formylamino group, formyl(C₁₋₆ alkyl)amino groups, thioformylamino group, thioformyl(C₁₋₆ alkyl)amino groups, C₂₋₆ alkanoyloxy groups, formyloxy group, mercapto group, C₁₋₆ alkylthio groups, C₁₋₆ alkylsulfinyl groups, C₁₋₆ alkylsulfonyl groups, aminosulfonyl group, C₁₋₆ alkylaminosulfonyl groups, di(C₁₋₆ alkyl)aminosulfonyl groups, C₁₋₆ alkylsulfonylamino groups, and C₁₋₆ alkylsulfonyl(C₁₋₆ alkyl)amino groups; and

R³ each independently represents pyridyl which may have a substituent which may have 1 to 3 substituents selected from halogen atoms, C₁₋₆ alkyl groups, trihalogenomethyl groups, C₁₋₆ alkoxy groups, formyl group, C₂₋₆ alkanoyl groups, carboxyl group, carboxyamino C₁₋₆ alkyl groups, C₁₋₆ alkoxycarbonylamino C₁₋₆ alkyl groups, oxo group, nitro group, cyano group, amidino group, C₂₋₆ alkenyloxy groups, hydroxy group, thioxo group, amino group, C₁₋₆ alkylamino groups, di(C₁₋₆ alkyl)amino groups, C₁₋₆ alkoxycarbonyl groups, carbamoyl group, C₁₋₆ alkylcarbamoyl groups, di(C₁₋₆ alkyl)carbamoyl groups, thiocarbamoyl group, C₁₋₆ alkylthiocarbamoyl groups, di(C₁₋₆ alkyl)thiocarbamoyl groups, mercapto group, C₁₋₆ alkylthio groups, C₁₋₆ alkylsulfinyl groups and C₁₋₆ alkylsulfonyl groups,

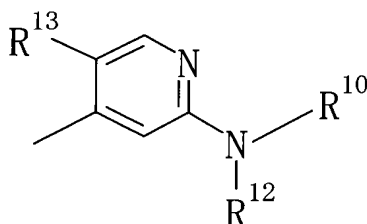
R⁴ represents a hydrogen atom or a C₁₋₆ alkyl group,

X represents -S-, -SO- or -SO₂-;

an N-oxide or S-oxide thereof; or a salt thereof..

Claims 2-7 (Canceled).

Claim 8 (Currently Amended): A compound according to Claim 1, wherein R² represents a group represented by the following formula:



wherein,

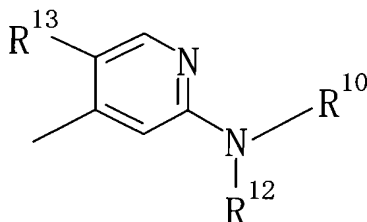
R¹⁰ represents a hydrogen atom, C₁₋₆ alkyl group, hydroxy C₁₋₆ alkyl group, C₁₋₆ alkylsulfinyl C₁₋₆ alkyl group, C₁₋₆ alkylsulfonyl C₁₋₆ alkyl group, carboxy C₁₋₆ alkyl group, ~~heterocycle-C₁₋₆-alkyl group~~, or a group represented by the formula: -SO₂-R¹¹ (in which, R¹¹ represents a C₁₋₆ alkyl, ~~heterocyclic, C₁₋₆-alkyl heterocyclic, heterocycle-C₁₋₆-alkyl~~, hydroxy C₁₋₆ alkyl, amino C₁₋₆ alkyl, C₁₋₆ alkylamino C₁₋₆ alkyl, di(C₁₋₆ alkyl)amino C₁₋₆ alkyl, carboxy C₁₋₆ alkyl, carbamoyl C₁₋₆ alkyl, trifluoromethyl, difluoromethyl, fluoromethyl, amino, C₁₋₆ alkylamino or di(C₁₋₆ alkyl)amino),

R¹² represents a hydrogen atom, C₁₋₆ alkyl group, hydroxy group, or amino group, ~~or R¹¹ and R¹² may, taken together with a sulfur atom to which R¹¹ is attached and a nitrogen atom to which R¹² is attached, form a 5- or 6-membered aliphatic heterocycle having 1 to 4 atoms selected from nitrogen, oxygen and sulfur atoms, and~~

R^{13} represents a C_{1-6} alkyl group, halogen atom or cyano group; an N-oxide or S oxide thereof; or a salt thereof;

~~wherein the hereocycle and heterocyclic group represent a saturated monocyclic heterocyclic group, selected from 3 to 7 membered heterocycles having 1 to 4 atoms selected from nitrogen, oxygen and sulfur atoms, or an unsaturated or aromatic monocyclic heterocyclic group selected from 3 to 7 membered heterocyclic groups having 1 to 4 atoms selected from nitrogen, oxygen and sulfur atoms.~~

Claim 9 (Currently Amended): A compound according to Claim 1, wherein R^2 represents a group represented by the following formula:



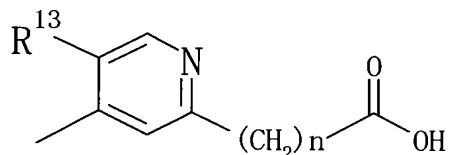
wherein,

R^{10} represents a group represented by the formula: $-SO_2-R^{11}$ (in which, R^{11} represents a C_{1-6} alkyl, ~~heterocyclic, C_{1-6} alkyl heterocyclic, heterocycle- C_{1-6} alkyl,~~ hydroxy C_{1-6} alkyl, amino C_{1-6} alkyl, C_{1-6} alkylamino C_{1-6} alkyl, di(C_{1-6} alkyl)amino C_{1-6} alkyl, carboxy C_{1-6} alkyl, carbamoyl C_{1-6} alkyl, trifluoromethyl, difluoromethyl, fluoromethyl, amino, C_{1-6} alkylamino or di(C_{1-6} alkyl)amino),

R^{12} represents a hydrogen atom, C_{1-6} alkyl group, hydroxy group or amino group, ~~or R^{11} and R^{12} may, taken together with a sulfur atom to which R^{11} is attached and a nitrogen atom to which R^{12} is attached, form a 5 or 6 membered aliphatic heterocycle having 1 to 4 atoms selected from nitrogen, oxygen and sulfur atoms, and~~

R^{13} represents a C_{1-6} alkyl group, halogen atom or cyano group; an N-oxide or S-oxide thereof; or a salt thereof.

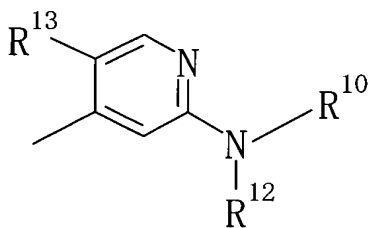
Claim 10 (Currently Amended): A compound according to Claim 1, wherein R^2 represents a compound represented by the formula:



wherein,

R^{13} represents a C_{1-6} alkyl group, halogen atom or cyano group, and n stands for an integer of from 0 to 6; an N-oxide or S-oxide thereof; or a salt thereof.

Claim 11 (Currently Amended): A compound according to Claim 1, wherein R^1 represents a 2,5-difluorophenyl or 2-fluoro-5-cyanophenyl group, R^3 represents a 5-chloro-2-pyridyl, 6-chloro-3-pyridyl, or 6-trifluoromethyl-3-pyridyl group; R^2 represents a group represented by the following formula:



wherein,

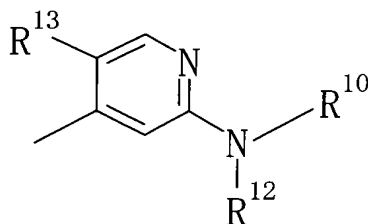
R^{10} represents a hydrogen atom, C_{1-6} alkyl group, hydroxy C_{1-6} alkyl group, C_{1-6} alkylsulfinyl C_{1-6} alkyl group, C_{1-6} alkylsulfonyl C_{1-6} alkyl group, carboxy C_{1-6} alkyl group, ~~heterocycle- C_{1-6} -alkyl group~~, or a group represented by the formula: $-SO_2-R^{11}$ (in which, R^{11} represents a C_{1-6} alkyl, ~~heterocyclic, C_{1-6} -alkyl heterocyclic, heterocycle- C_{1-6} -alkyl~~, hydroxy C_{1-6} alkyl, amino C_{1-6} alkyl, C_{1-6} alkylamino C_{1-6} alkyl, di(C_{1-6} alkyl)amino C_{1-6} alkyl, carboxy C_{1-6} alkyl, carbamoyl C_{1-6} alkyl, trifluoromethyl, difluoromethyl, fluoromethyl, amino, C_{1-6} alkylamino, or di(C_{1-6} alkyl)amino),

R^{12} represents a hydrogen atom, C_{1-6} alkyl group, hydroxy group, or amino group, ~~or R^{11} and R^{12} may, taken together with a sulfur atom to which R^{11} is attached and a nitrogen atom to which R^{12} is attached, form a 5- or 6-membered aliphatic heterocycle having 1 to 4 atoms selected from nitrogen, oxygen and sulfur atoms, and~~

R^{13} represents a C_{1-6} alkyl group, halogen atom or cyano group; an N-oxide or S-oxide thereof; or a salt thereof.

Claim 12 (Currently Amended): A compound according to Claim 1, wherein R^1 represents a 2,5-difluorophenyl or 2-fluoro-5-cyanophenyl group, R^3 represents a 5-chloro-2-pyridyl, 6-chloro-3-pyridyl or 6-trifluoromethyl-3-pyridyl group;

R^2 represents a group represented by the following formula:



wherein,

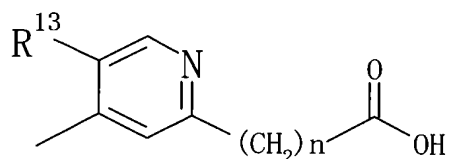
R^{10} represents a group represented by the formula: $-SO_2-R^{11}$ (in which, R^{11} represents a C_{1-6} alkyl, ~~heterocyclic, C_{1-6} alkyl heterocyclic, heterocycle- C_{1-6} alkyl~~, hydroxy C_{1-6} alkyl, amino C_{1-6} alkyl, C_{1-6} alkylamino C_{1-6} alkyl, di(C_{1-6} alkyl)amino C_{1-6} alkyl, trifluoromethyl, difluoromethyl, fluoromethyl, amino, C_{1-6} alkylamino or di(C_{1-6} alkyl)amino),

R^{12} represents a hydrogen atom, C_{1-6} alkyl group, hydroxy group or amino group, ~~or R^{14} and R^{12} may, taken together with a sulfur atom to which R^{14} is attached and a nitrogen atom to which R^{12} is attached, form a 5- or 6-membered aliphatic heterocycle, and~~

R^{13} represents a C_{1-6} alkyl group, halogen atom or cyano group; an N-oxide or S-oxide thereof; or a salt thereof.

Claim 13 (Previously Presented): A compound according to Claim 1, wherein R^1 represents a 2,5-difluorophenyl or 2-fluoro-5-cyanophenyl group, R^3 represents a 5-chloro-2-pyridyl, 6-chloro-3-pyridyl, or 6-trifluoromethyl-3-pyridyl group;

R^2 represents a group represented by the following formula:



wherein,

R^{13} represents a C_{1-6} alkyl group, halogen atom or cyano group and n stands for an integer of from 0 to 6; an N-oxide or S-oxide thereof; or a salt thereof.

Claim 14 (Previously Presented): A medicament comprising, as an effective ingredient, a compound as claimed in Claim 1, an N-oxide or S-oxide thereof; or a salt thereof.

Claim 15 (Currently Amended): A medicament according to Claim 14, which is used for ~~prevention or~~ treatment of a disease resulting from abnormal production or secretion of β -amyloid protein.

Claim 16 (Original): A medicament according to Claim 15, wherein the disease resulting from abnormal production or secretion of β amyloid protein is Alzheimer disease or Down syndrome.

Claim 17 (Previously Presented): A pharmaceutical composition comprising a compound as claimed in Claim 1, an N-oxide or S oxide thereof, or a salt thereof and a pharmaceutically acceptable carrier.

Claims 18-20 (Canceled):

Claim 21 (Previously Presented; Withdrawn): A method of treating a disease resulting from abnormal production or secretion of β -amyloid protein, which comprises administering an effective amount of a compound as claimed in Claim 1, an N-oxide or S-oxide thereof, or a salt thereof.

Claim 22 (Previously Presented, Withdrawn): A method according to Claim 21, wherein the disease resulting from abnormal production or secretion of β amyloid protein is Alzheimer disease or Down syndrome.

Claim 23 (Currently Amended): A compound according to Claim 1, comprising at least one selected from the group consisting of:

~~5-Chloro-2-[(2,5-difluorophenyl-4-pyridyl)methyl]thio]pyridine,~~
~~5-Chloro-2-[(2,5-difluorophenyl-4-pyridyl)methyl)sulfonyl]pyridine,~~
~~2-Chloro-5-[(3-chloropyridin-4-yl)(2,5-difluorophenyl)methylthio]pyridine,~~
~~2-Chloro-5-[(3-chloropyridin-4-yl)(2,5-difluorophenyl)methylsulfonyl]pyridine,~~
~~5-[(3-Chloropyridin-4-yl)(2,5-difluorophenyl)methylsulfonyl]-2-fluoropyridine,~~
[5-Chloro-4-[(5-chloropyridin-2-ylsulfonyl)(2,5-difluorophenyl)methyl]pyridin-2-yl]amine,
N-[5-Chloro-4-[(5-chloropyridin-2-ylsulfonyl)(2,5-difluorophenyl)methyl]pyridin-2-yl]methanesulfonamide,
t-Butyl [5-chloro-4-[(6-chloropyridin-3-ylthio)(2,5-difluorophenyl)methyl]pyridin-2-yl]carbamate,
[5-Chloro-4-[(6-chloropyridin-3-ylsulfonyl)(2,5-difluorophenyl)methyl]pyridin-2-yl]amine, and
[5-Chloro-4-[(2,5-difluorophenyl)(6-trifluoromethylpyridin-3-ylsulfonyl)methyl]pyridin-2-yl]amine.